

REMARKS/ARGUMENTS

Claims 26 and 28 were rejected under 35 U.S.C. § 102(e) as anticipated by Karlen et al. (US 6,190,647 B1). Applicants traverse this rejection.

Karlen was cited for disclosing Gaffix® VC 713. This is described in the specification at column 3 (lines 56-59) as a terpolymer of vinyl pyrrolidone, dimethyl aminoethyl methacrylate and vinyl caprolactam.

Applicants' holding polymer is not Gaffix® VC 713. The presently claimed methacrylamidopropyl dimethylamine is not chemically equivalent to dimethylaminoethyl methacrylate. The former is an amide while the reference is a carboxylate.

Claim 19 from which claim 26 depends requires the further presence of hydroxyethyl cellulose. This specific material is not present in the reference. The closest material in Karlen et al. is hydroxypropyl cellulose which is not hydroxyethyl cellulose.

A third distinction is the claim requirement for the joint presence of a holding polymer which is methacrylamidopropyl dimethylamine/vinyl pyrrolidone polymer (MAPDMA/VP) and hydroxyethyl cellulose. Karlen et al. even with hydroxypropyl cellulose and Gaffix® VC 713 does not state that these two types of materials are both to be present. Most especially, there is no disclosure with respect to the relative claimed ratios between (a) to (b) as being about 1:2.2 to about 1:0.2. For all the above reasons, Karlen et al. could not possibly anticipate the claims.

Claims 19-25 were rejected under 35 U.S.C. § 103(a) as unpatentable over Peffly (US Patent 5,985,294) or alternatively in view of Karlen. Applicants traverse this rejection.

Moisture and the natural tendency of curly hair to revert are enemies in the battle to retain a desired hairstyle configuration. Hair holding polymers have been enlisted to fight this battle. These materials are good soldiers. Yet they often are required to be marshaled at high concentrations. Unwanted collateral damage often occurs in the form of flaking. The most effective polymers are those which display excellent stiffness and a high crust signal. Accordingly, applicants have sought to identify hair holding polymer systems with the aforementioned properties indicating high styling efficiency yet that are operative at levels no higher than about 1.5% active holding polymer.

In pursuit of this goal, applicants have identified polymers derived from copolymerization of methacrylamidopropyl dimethylamine and vinylpyrrolidone (hereinafter generically MAPDMA/VP) in combination with hydroxy ethyl cellulose (hereinafter HEC) in a particular ratio range.

Peffly discloses a large range of hairstyling polymers. These are disclosed at column 3 (line 60) bridging to column 5 (line 23). The closest polymer to applicants' hair holding polymer listed by Peffly is Styleze CC-10, a DMAPA/VP Acrylate copolymer (sometimes referenced as PVP/DMAPA). The DMAPA/VP refers to vinylpyrrolidone/dimethylaminoethyl methacrylate copolymer. See Peffly at column 4 (lines 18, 50-51 and 58). Also compare applicants' specification at page 6 (last two lines) bridging to page 7 (line 1). The PVP/DMAPA Acrylates copolymer is distinct from the presently claimed Polymer 1189 which is a terpolymer herein referenced as MAPDMA/VP/VC. Peffly utilizes a carboxylate type methacrylate while applicants utilize

an amide derived from methacrylate. In other words, the monomers and resulting polymers are of significantly different structure. Applicants apologize for any confusion created in their earlier amendments.

Karlen as noted above is similarly deficient in not revealing a polymer with an acrylamide monomer unit. Absent any disclosure with respect to a polymer including the amide monomer known as methacrylamidopropyl dimethylamine, the references would not present a prima facie case of obviousness.

Even if there were some equivalents between the Peffly and Karlen DMAPA/VP Acrylates copolymer and that of the terpolymer presently claimed, there is no specific recommendation by the references to use combinations of those particular polymers. It is not at all evident that any synergistic effect would be brought about by combining a terpolymer or even DMAPA/VP with hydroxyethyl cellulose.

Attention is drawn to the comparative experiments in the specification. The Table at page 22 identifies Formulas Z, AA and BB as containing the hair holding polymers of hydroxyethyl cellulose alone, Polymer 1189 (MAPDMA/VP) alone and a combination of these two hair holding polymers. Table 7 at page 23 shows the results of Crust and Stiffness testing. There it is seen that the best result is with BB, the combination of the two hair holding polymers.

Only within certain relative weight ratios do these two hair holding polymers function in a synergistic manner. Comparative experiments have been described in the specification to demonstrate the criticality of the weight ratio. A series of formulations with different ratios of MAPDMA/VP are reflected in Examples A through I. The results of curl

retention testing are reported in Table 1 at page 14. Test 1 (6 hrs) reveals highest retention in the 90% region for Examples B and C corresponding to ratios of 1:0.4 and 1:0.7 respectively for MAPDMA/VP to HEC. Slightly poorer performance (circa 83-84%) is found with Examples G and H, respectively having ratios 1:1.6 and 1:1.9. The outer limits are represented by Examples E and I having curl retention percent values circa 80% reflecting respective ratios of 1:0.2 and 1:2.2. Clearly outside the effective range is Example A with ratio of 1:0.1 and curl retention of 31.4% (taken from Test 2 at 6 hrs.). In accordance with these results, applicants' claim 14 covers a ratio from about 1:2.2 to about 1:0.2.

In view of the foregoing discussion, it should be evident that either Peffly alone or in view of Karlen would not render the instant invention obvious.

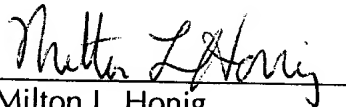
Claim 27 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Peffly (US Patent 5,985,294) and Karlen as applied to claims 19-25, and further in view of Mizutani et al. (US Patent 4,411,891). Applicants traverse this rejection.

The Examiner has recognized that Peffly and Karlen do not disclose dextran. Mizutani was introduced to teach that cationized dextran derivatives and their salts impart advantageous properties to hair.

Mizutani does not remedy the basic deficiencies of Peffly and Karlen. There is no disclosure of any hair holding polymer in any of the three references which utilizes a monomer based on methacrylamidopropyl dimethylamine. This monomer unit is an amide whereas the closest prior art is concerned with carboxylate type methacrylates. A prima facie case of obviousness has not been presented by the Examiner.

In view of the foregoing amendments and comments, applicants request the Examiner to reconsider the rejection and now allow the claims.

Respectfully submitted,

  
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